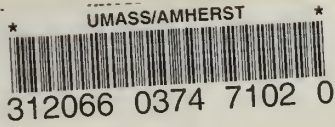


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Goldman  
Sachs

# Privatization Turnpike Report

March 12, 1992

H.W.

## Executive Summary

### General

Our general observations and conclusions with respect to privatization of the Turnpike have been made in cooperation with Coopers & Lybrand. The privatization model and the results related thereto were run through a specially-tailored Goldman Sachs turnpike privatization model which can be adjusted for various assumptions.

We hope our observations and the data analyses attached hereto will add useful insight into the debate now going on within the Commonwealth with respect to transportation issues.

- Privatization, in whole or in part, may make economic sense for the Massachusetts Turnpike Authority. However, further study will be needed as noted herein. It is possible that through an outright sale of the Turnpike or through the hiring of a private operator via a management contract (or a concession arrangement), the Commonwealth might obtain very positive financial and operating results. It is our view that this effort is certainly worth pursuing further.
- New technology such as automated toll collection equipment is being studied and used by a number of domestic and international toll roads. In recent years, technological innovations affecting toll collections have resulted in increased efficiency and reduced operating costs for a number of toll roads around the country. (Such technology and equipment would require a capital investment which can provide a reasonable return on such investment over a reasonable period.) Capital investment in sophisticated toll collection equipment (and/or greater private contracting of services as mentioned above) may impact materially any privatization or valuation model. A comprehensive privatization analysis should consider these options fully.
- While we have studied the Turnpike's historical "budget versus actual results" and its audited financial statements, no precise range of valuation can be set effectively without an independent forecast of operating results for future years by expert consultants.
- Any buyer of an asset of this sort would also require a broad, in-depth, independent study of the Turnpike's capital needs. Such a study, would generally need to be more comprehensive than the Turnpike's Critical Needs Study which we have included herewith.
- As part of a capital restructuring or advance refunding program for the Turnpike Authority, new legal documents would be put in place for the life of any new debt. Before the decision is made to commence any such refinancing program: (a) the costs and benefits of the options with respect to privatization should be fully weighed and (b) if it were decided that the Turnpike should be able to direct surpluses to other uses such as mass transit as is the case with the Triborough Bridge and Tunnel Authority in New York (which sends surplus funds to the New York City Transit Authority), then the flow of funds in the new bond resolution must be drafted to permit such application of funds. In each case, a reasonable range of the options related thereto can be taken into account in the new legal documents relating to such a refinancing program.

- In connection with any effort to privatize the Turnpike, to subcontract specific services, and/or to permit cross subsidization of mass transit, it is likely that the legislation affecting the Turnpike and the Callahan - Sumner Tunnels will require amendment or modification.

### The Interactive Model and its Assumptions

As part of this effort we have developed a model to aid in valuing the Turnpike from the point of view of a private sector purchaser or concessionaire. Any valuation would have to take into consideration a number of key variables, including existing toll rates and the flexibility to raise tolls in the future, the elasticity of traffic demand, the magnitude of projected operating and capital expenditures, property tax rates, income tax rates, the ability to take depreciation on the assets, and the cost of the capital to be raised to purchase the Turnpike or concession. The value of the privatization model is in the methodology and in the ability to vary the key operating and financial parameters to determine the affect on valuation. Critical variables such as the ability to raise tolls combined with highly inelastic demand would have a very significant affect on valuation.

The purchase of the Turnpike would generally be financed using a combination of debt and equity. The cost of capital, i.e. the interest rate on the debt and the return on the equity, would depend upon the perceived risk of operating the Turnpike and generating sufficient revenues to pay the debt and provide a return to equity.

The value to a purchaser/concessionaire would be derived by the return on equity, which is a combination of (a) net cash flows that are available for distribution after the payment of operations and maintenance expenses, reserving for future capital expenditures, payment of taxes, and the payment of debt service, — i.e. a cash on cash return, (b) tax benefits of ownership, and (c) the residual value of the asset. Generally the residual value is discounted greatly because the horizon of the "investment" is of such long duration.

Based upon certain highly sensitive assumptions on toll rate levels, O&M expenses, taxes, required return on equity, etc. we have obtained a valuation of nearly a billion dollars for an outright purchase of the turnpike. This number represents a basis for further discussion rather than a hard estimate. For example, to the extent that toll rates can be increased at a rate greater than inflation, a greater valuation could be derived.

Lastly, instead of receiving a one-time purchase price, an installment sale could be used by which the purchase would be executed over a period of time. For example, as an alternative to the above-referenced lump sum purchase price, the purchase could be made with ten annual payments of approximately \$140 million each year.

### Conclusion

In conclusion, substantial debate related to any privatization is essential on the following topics, among others: ownership, control, regulatory oversight, and prospective rate structure. Clearly, the proponents of privatization believe that governmental enterprises when sold will be run better and more cost effectively. As you know, there are examples of such successes. Nonetheless efforts of this sort require much study and are clearly difficult to implement, but in our view worthy of further pursuit.

Finally, the Turnpike Authority should not exist in a vacuum, but rather should be part of an integrated transportation policy and strongly fit within the fiscal considerations of the Commonwealth as a whole.

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**PRIVATIZATION - COMPLEX OPTIONS**

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## PRIVATIZATION - COMPLEX OPTIONS

### INTRODUCTION - OVERVIEW

Government and governmental employees across the nation in countless cases serve their constituents with high distinction. It is clear that most public policy analysts believe that state and local government can deliver services best at the local level as opposed to Washington. In today's period of fiscal stress, most state and local governmental agencies and authorities serve their constituents with effectiveness and a high degree of efficiency with relatively small staffs. Nonetheless, the challenge to government and its agencies and authorities is always to ask the question -- can it be done better and less expensively? As part of this evaluation process, privatization options should be analyzed to determine whether through privatization, in any of its various forms, governmental services could be provided more efficiently or at lower costs.

With respect to the Massachusetts Turnpike Authority, there are three primary privatization options that should be seriously evaluated:

- 1) Sell the Turnpike outright to a private entity/consortium to own and operate subject to rate regulation similar to utility rate base regulation or some other return-on-equity rate regulation similar to that recently proposed for the State of California private toll roads;
- 2) Privatize specific activities of the Turnpike by subcontracting to private parties. Some areas, as examples, where this may be feasible include maintenance, toll collection and community relations work; and
- 3) Through a concession contract or management agreement with a private toll road operator privatize all operations of the Turnpike for a period of time, subject to regulatory government oversight.

In all cases, the issues of control, ownership, employees and labor relations are the critical issues. From both an economic as well as public interest perspective,

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the way these issues are handled will to a great degree determine how successful the privatization effort is and is perceived.

#### 1. SALE OF THE ASSET

One option for privatizing the Turnpike is through some form of outright sale, transferring ownership and control of the Turnpike and associated assets to a private entity.

##### ADVANTAGES

The outright sale of the Turnpike – transferring ownership of a monopoly service – would achieve the highest possible sale price, making maximum sale proceeds available to the Commonwealth. Whether regulated through a price or rate-cap method or through a rate of return mechanism, similar to a regulated utility, the Turnpike appears to provide significant opportunity to generate profits over the long term. In addition, the relative accuracy and reliability of long term traffic forecasts should make the setting of an appropriate sale price – given clear regulatory guidelines and oversight mechanisms – quite straightforward.

Private ownership should provide maximum incentive for the new owner to seek gains in efficiency and additional development of the commercial potential of the asset. Profit incentive can motivate operational and management improvements.

Sale to a private entity will put the asset and any additional commercial activity developed in association with the asset onto the State tax rolls, providing a long term source of additional income to the State and local budgets.

##### DISADVANTAGES

Proceeds from the sale are one-time and provide no recurring benefits to the budget, with the exception of taxes. (An installment sale, however, may be feasible.)

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The reality that a private, taxable entity seeking financing for such a purchase will incur higher interest costs on its debt and will require a higher return on equity will have the effect of reducing the projected profitability of the privately owned Turnpike, and will tend to reduce the sale price realized by the State.

In part, due to the absence of a competing major east-west artery in Massachusetts, the State would have a significant ongoing regulatory responsibility over any private owner-operator. Great care will be required in structuring the regulatory regime governing toll increases and operators' return on investment, etc. to ensure an appropriate level of control over the monopoly created by such a sale.

It would be necessary to provide coordination and oversight to ensure safe, efficient operation of a private Turnpike and its interface and integration with the state-wide public roads system.

#### FEASIBILITY

Based on our preliminary models using long range traffic forecasts provided by the Authority, privatization of the Turnpike appears feasible. There are, however, several issues – economic, political, legal labor and practical – which would have to be successfully addressed prior to any effective privatization of the Turnpike.

Due to the unique nature of such a transaction, there is a question as to whether there would be qualified buyers for the Turnpike. Based on the trend toward increasing private building and operation of toll roads and bridges both nationally and internationally, it is likely that more than one buyer or consortia of buyers would surface for such an opportunity if properly structured.

In an outright sale of the assets of the Turnpike, the State would relinquish legal control of an asset vital to commercial and public interests in Massachusetts. If this were a concern, the use of a long term lease of the

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roadway itself in lieu of sale would result in legal title to that asset not being transferred to the purchaser.

## 2. CONTRACTING OUT SERVICES

As a major contractor for heavy construction and other engineering services, the Turnpike has well documented bidding procedures which could be easily and effectively applied to contracting for other services such as maintenance and repair activities.

## 3. CONCESSION OR MANAGEMENT CONTRACT

Another option for privatization is a long-term concession or management contract, where operational and management responsibility and the right to receive profits are conferred upon a private entity by contract, in exchange for an up-front payment or a share of profits over time or a combination of both.

### ADVANTAGES

The Commonwealth can, in the case of a concession, receive a substantial current payment for concession rights, but because the purchaser's rights are limited in degree and duration, generally not on the order of the receipts from an outright sale. If the Commonwealth believes that profits from the Turnpike will increase significantly over time, it can elect to take a lower initial payment in exchange for a share of profits over the life of the contract. In this way, the Commonwealth can continue to derive benefit from the improved performance of the Turnpike under private management.

From the standpoint of ownership, the Commonwealth retains title to all assets of the Turnpike with this approach. This simplifies the privatization process and allows for easier reversal of the transaction in the event of non-performance. Control and ownership is retained.



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### Description of Model

For the purposes of demonstrating the methodology which would generally be used in valuing an asset such as the turnpike, we developed a model which takes as its primary inputs the following:

- (a) **projection of operating revenues** - we have used actual 1990 year-end figures and assumed a 4% annual growth rate.
- (b) **projection of operations and maintenance expenses** - we have used actual 1990 year-end figures and assumed a 4% annual growth rate.
- (c) **property tax and income tax assumptions** - we have assumed a semi-annual \$2 million property tax payment and a 34% combined federal and state income tax rate.
- (d) **depreciation schedule** - we assumed that 80% of the cost basis could be depreciated using a 15 year accelerated schedule and that the remaining 20% of the cost basis would be depreciated using a 30 year straight line schedule.
- (e) **capital structure (debt and equity cost)** - we have assumed the following capital structure:
  - 20% equity with a minimum after tax rate of return of 15%,
  - 60% senior debt (1st lien on net revenues), approximately level 30 year debt service at an interest rate of 10%,
  - 20% subordinated debt (2nd lien on net revenues), 30 year amortization but with a longer average life when compared to the senior debt, i.e. the subordinated debt principal gets paid at a slower rate than does the senior debt principal; interest rate of 11.5%,
  - rate of return assumption related to capital structure -- our return on equity assumption is similar to the kind of return for a co-generation project which has a similar predictability of revenues,
  - Our cost of debt assumes an investment grade rating.

[Please note that these interest rates and return on equity are only for demonstration purposes and are not intended as an indication of the rates that could be obtained.]

**Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels**

**SCENARIO: 4% Annual Growth in Revenues  
and Expenses / Target 15% IRR to Equity**

**INSTALLMENT TYPE SALE CALCULATIONS**

<b>Up-Front Purchase Price for Scenario</b>		943,750,000
<b>Receive Proceeds Annually Over Time @:</b>	<b>8.0000%</b>	
	<b>Number of Years:</b>	<b>One Level Payment:</b>
Five Annual Installments	5.00	236,368,279
Ten Annual Installments	10.00	140,646,580
Fifteen Annual Installments	15.00	110,257,883
Twenty Annual Installments	20.00	96,123,022
Twenty Five Annual Installments	25.00	88,409,348
		2,210,233,693
		<b>Gross Proceeds:</b>
		1,181,841,395
		1,406,465,800
		1,653,868,246
		1,922,460,442
		2,210,233,693

Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels

**NARIO: 4% Annual Growth In Revenues**

and Expenses (1)

1990 Base  
Year Actuals  
(Inflated by 4%)

	(Revenue Growth Rate)		Semi-Annual Period									
	(Expense Growth Rate)		Dec-91	Jun-91	Dec-91	Jun-92	Dec-92	Jun-93	Dec-93	Jun-94	Dec-94	
Tax Income:	0.0000%	1.9804%	Dec-91	Jun-91	Dec-91	Jun-92	Dec-92	Jun-93	Dec-93	Jun-94	Dec-94	
Semi-Annual Toll Revenues	0.0000%	1.9804%	157,358,772	77,151,486	78,679,386	80,237,545	81,826,562	83,447,047	85,099,624	86,784,929	88,503,609	
Operating and Maintenance Expenses	0.0000%	1.9804%	65,747,760	32,235,491	32,873,890	33,524,911	34,188,835	34,865,908	35,556,389	36,260,544	36,978,644	
Property Taxes			2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	
EBITD (1-2-3)			89,611,012	42,915,994	43,805,506	44,712,634	45,637,726	46,581,139	47,543,236	48,524,385	49,524,965	
Present Value of Revenues Available for Debt Service @10			1,198,662,959									
is and Depreciation:												
Total Semi-Annual Interest Payment	0		0	39,165,625	39,089,570	39,009,712	38,925,861	38,837,818	38,745,372	38,648,305	38,546,384	
Depreciation	0		0	22,020,833	22,020,833	39,008,333	39,008,333	35,422,083	35,422,083	32,213,333	32,213,333	
Pre-Tax Income (4-5-6)	89,611,012		89,611,012	(18,270,464)	(17,304,897)	(33,305,411)	(32,296,468)	(27,678,762)	(26,624,220)	(22,337,253)	(21,234,752)	
Federal and State Taxes (7*Tax Rate)	34.00%		30,467,744	(6,211,958)	(5,883,665)	(11,323,840)	(10,980,799)	(9,410,779)	(9,052,235)	(7,594,666)	(7,219,816)	
Taxes Actually Paid			30,467,744	0	0	0	0	0	0	0	0	
- Tax Income/Net Project Cash Flows:												
1) After-Tax Income (7-8)	59,143,268		59,143,268	(12,058,506)	(11,421,232)	(21,981,571)	(21,315,669)	(18,267,983)	(17,571,985)	(14,742,587)	(14,014,936)	
2) After-Tax Cash Flow (4-5-9)	89,611,012		89,611,012	3,750,369	4,715,936	5,702,922	6,711,865	7,743,321	8,797,863	9,876,080	10,978,581	
3) Total Semi-Annual Principal Payment	0		0	1,521,102	1,597,158	1,677,015	1,760,866	1,848,909	1,941,355	2,038,423	2,200,344	
4) Net Project Cash Flows (11-12)	89,611,012		89,611,012	2,229,267	3,118,779	4,025,907	4,950,999	5,894,412	6,856,508	7,837,658	8,778,238	
5) Internal Rate of Return on Equity	15.0128%		(188,750,000)	2,229,267	3,118,779	4,025,907	4,950,999	5,894,412	6,856,508	7,837,658	8,778,238	
Total Equity Investment at 20% Equity/Debt Ratio			188,750,000									
Average Ratios:												
1) Pre-Tax Senior Debt Service Coverage Ratio				143.85%	146.83%	149.87%	152.97%	156.14%	159.36%	162.65%	166.00%	
2) Pre-Tax Subordinated Debt Service Coverage Ratio				105.48%	107.67%	109.89%	112.17%	114.49%	116.85%	119.26%	121.54%	
Maximum Semi-Annual Principal and Interest precipitation Schedule:	41,842,302			1	2	3	4	5	6	7	8	
Total Project Cost:			943,750,000									
15 Year ACRS			ACRS%	2.5000%	2.5000%	4.7500%	4.7500%	4.2750%	4.2750%	3.8500%	3.8500%	
% Allocation	80.00%		755,000,000	18,875,000	18,875,000	35,862,500	35,862,500	32,276,250	32,276,250	29,067,500	29,067,500	
30 Year Straight Line												
% Allocation	20.00%		188,750,000	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	
Non-Depreciable												
% Allocation	0.00%		0									
Total Original Project Cost Depreciation			943,750,000	22,020,833	22,020,833	39,008,333	39,008,333	35,422,083	35,422,083	32,213,333	32,213,333	

(1) Historical revenue increases for the past five years have been approximately 9.5%. However, we assume only 4% increases in revenues. This lower figure offsets the effects of ongoing debt service and future capital costs and expenditures.



Massachusetts Turnpike Authority  
 Cashflow/Income Statement Model for Privately  
 Owned and Operated Toll Road and Tunnels

VARIO: 4% Annual Growth In Revenues  
 and Expenses

	1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%	
	Jun-95	Dec-95	Jun-96	Dec-96	Jun-97	Dec-97	Jun-98	Dec-98	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02
<b>Tax Income:</b>																
Semi-Annual Toll Revenues	90,256,326	92,043,753	93,866,579	95,725,504	97,621,242	99,554,524	101,526,092	103,536,705	105,587,136							
Operating and Maintenance Expenses	37,710,966	38,457,790	39,219,404	39,996,102	40,788,180	41,595,946	42,419,708	43,259,783	44,116,496							
Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000							
EBITD (1-3)	50,545,360	51,585,964	52,647,175	53,729,402	54,833,062	55,958,578	57,106,384	58,276,921	59,470,640							
Less: Value of Revenues Available for Debt Service @10																
and Depreciation:																
Total Semi-Annual Interest Payment	38,435,916	38,314,923	38,183,137	38,039,701	37,884,896	37,717,837	37,538,199	37,345,065	37,138,077							
Depreciation	29,306,583	29,306,583	26,664,083	26,664,083	25,418,333	25,418,333	25,418,333	25,418,333	25,456,083							
Pre-Tax Income (4-5-6)	(17,197,139)	(18,035,543)	(12,200,045)	(10,974,382)	(8,470,168)	(7,177,592)	(5,850,148)	(4,486,477)	(3,123,520)							
Federal and State Taxes (7*Tax Rate)	(5,847,027)	(5,452,085)	(4,148,015)	(3,731,290)	(2,879,857)	(2,440,381)	(1,989,050)	(1,525,402)	(1,061,997)							
Taxes Actually Paid	0	0	0	0	0	0	0	0	0							
<b>Tax Income/Net Project Cash Flow:</b>																
After-Tax Income (7-8)	(11,350,112)	(10,583,458)	(8,052,030)	(7,243,092)	(5,590,311)	(4,737,211)	(3,861,098)	(2,961,075)	(2,061,523)							
After-Tax Cash Flow (4-5-9)	12,109,444	13,271,040	14,464,038	15,689,701	16,948,168	18,240,741	19,568,186	20,931,857	22,332,563							
Total Semi-Annual Principal Payment	2,397,361	2,599,729	2,817,718	3,031,601	3,261,681	3,498,265	3,751,679	4,012,263	4,280,378							
Net Project Cash Flows (11-12)	9,712,083	10,671,311	11,646,322	12,658,100	13,686,484	14,742,476	15,816,507	16,919,594	18,052,187							
Internal Rate of Return on Equity	9,712,083	10,671,311	11,646,322	12,658,100	13,686,484	14,742,476	15,816,507	16,919,594	18,052,187							
Equity Investment at 20% Equity/Debt Ratio																
<b>Range Ratios:</b>																
Pre-Tax Senior Debt Service Coverage Ratio	169.42%	172.91%	176.47%	180.10%	183.80%	187.57%	191.42%	195.34%	199.34%							
Pre-Tax Subordinated Debt Service Coverage Ratio	123.78%	126.08%	128.41%	130.82%	133.26%	135.77%	138.31%	140.91%	143.58%							
Minimum Semi-Annual Principal and Interest	41,842,302															
Depreciation Schedule:																
Total Project Cost:	9	10	11	12	13	14	15	16	17							
15 Year ACRS																
% Allocation	3.4650%	3.4650%	3.1150%	3.1150%	2.9500%	2.9500%	2.9500%	2.9500%	2.9500%							
30 Year Straight Line	26,160,750	26,160,750	23,518,250	23,518,250	22,272,500	22,272,500	22,272,500	22,272,500	22,310,250							
% Allocation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833							
Non-Depreciable																
% Allocation	0.00%															
Total Original Project Cost Depreciation	29,306,583	29,306,583	26,664,083	26,664,083	25,418,333	25,418,333	25,418,333	25,418,333	25,456,083							



# Cashflow/Income Statement Model for Privately Owned and Operated Toll Road and Tunnels

ENARJO: 4% Annual Growth In Revenues  
and Expenses

	(Revenue Growth Rate)		(Expense Growth Rate)		Semi-Annual Period		Dec-99		Jun-00		Dec-00		Jun-01		Dec-01		Jun-02		Dec-02		Jun-03		Dec-03	
	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%
-Tax Income:																								
1) Semi-Annual Toll Revenues	107,678,173	109,810,621	111,985,300	114,203,046	116,464,712	118,771,168	121,123,300	123,522,014	125,968,232															
2) Operating and Maintenance Expenses	44,990,175	45,881,156	46,789,782	47,716,402	48,681,373	49,625,058	50,607,828	51,610,060	52,632,141															
3) Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000															
4) EBITD (1-2-3)	60,687,998	61,929,465	63,195,518	64,486,644	65,803,339	67,146,110	68,515,472	69,911,954	71,336,091															
Present Value of Revenues Available for Debt Service @10																								
Less and Depreciation:																								
1) Total Semi-Annual Interest Payment	36,916,858	36,681,013	36,430,127	36,163,190	35,878,743	35,578,731	35,260,225	34,923,120	34,566,285															
2) Depreciation	25,456,083	25,418,333	25,418,333	25,456,083	25,456,083	25,418,333	25,418,333	25,456,083	25,456,083															
3) Pre-Tax Income (4-5-6)	(1,684,943)	(169,881)	1,347,057	2,867,371	4,467,512	6,149,045	7,836,914	9,532,750	11,313,723															
4) Federal and State Taxes (7*Tax Rate)	(572,881)	(57,760)	458,000	974,906	1,518,954	2,090,675	2,664,551	3,241,135	3,846,666															
5) Taxes Actually Paid	0	0	0	0	0	0	0	0	0															
Net Tax Income/Net Project Cash Flows:																								
0) After-Tax Income (7-8)	(1,112,062)	(112,122)	889,058	1,892,465	2,948,558	4,058,370	5,172,363	6,291,615	7,467,057															
1) After-Tax Cash Flow (4-5-9)	23,771,140	25,248,452	26,765,391	28,323,454	29,923,596	31,567,378	33,255,247	34,988,834	36,769,807															
2) Total Semi-Annual Principal Payment	4,556,395	4,840,714	5,143,750	5,455,938	5,787,734	6,119,621	6,472,102	6,845,707	7,220,993															
3) Net Project Cash Flows (11-12)	18,214,746	20,407,738	21,621,641	22,867,516	24,135,861	25,447,757	26,783,145	28,143,127	29,548,814															
4) Internal Rate of Return on Equity	19,214,746	20,407,738	21,621,641	22,867,516	24,135,861	25,447,757	26,783,145	28,143,127	29,548,814															
Cost Equity Investment at 20% Equity/Debt Ratio																								

## verage Ratios:

5) Pre-Tax Senior Debt Service Coverage Ratio	203.42%	207.58%	211.83%	216.15%	220.57%	225.07%	229.66%	234.34%	239.11%															
6) Pre-Tax Subordinated Debt Service Coverage Ratio	146.33%	149.15%	152.01%	154.84%	157.92%	161.03%	164.18%	167.38%	170.71%															
Maximum Semi-Annual Principal and Interest	41,842,302																							
Depreciation Schedule:																								
Total Project Cost:	18	19	20	21	22	23	24	25	26															
15 Year ACRS																								
% Allocation	22,310,250	22,272,500	22,272,500	22,310,250	22,310,250	22,272,500	22,272,500	22,310,250	22,310,250															
30 Year Straight Line																								
% Allocation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833															
Non-Depreciable																								
% Allocation																								
Total Original Project Cost Depreciation	25,456,083	25,418,333	25,418,333	25,456,083	25,456,083	25,418,333	25,418,333	25,456,083	25,456,083															

Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels

NARIO: 4% Annual Growth in Revenues  
and Expenses

	(Revenue Growth Rate)		(Expense Growth Rate)		Semi-Annual Period		Semi-Annual Period		Semi-Annual Period		Semi-Annual Period		Semi-Annual Period		Semi-Annual Period		Semi-Annual Period	
	1.9804%	1.9804%	1.9804%	1.9804%	Jun-04	Dec-04	Jun-05	Dec-05	Jun-06	Dec-06	Jun-07	Dec-07	Jun-08	Dec-08	Jun-09	Dec-09	Jun-10	Dec-10
Tax Income:																		
Semi-Annual Toll Revenues	128,462,895	131,006,962	133,601,411	136,247,240	138,945,467	141,697,130	144,503,286	147,365,015	150,283,417									
Operating and Maintenance Expenses	53,674,463	54,737,427	55,821,441	56,926,924	58,054,299	59,204,001	60,376,471	61,572,161	62,791,530									
Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000									
EBITD (1-2-3)	72,788,432	74,269,535	75,779,969	77,320,316	78,891,168	80,493,129	82,126,815	83,792,854	85,491,887									
Present Value of Revenues Available for Debt Service @10%																		
Depreciation:																		
Total Semi-Annual Interest Payment	34,189,710	33,792,208	33,373,135	32,931,239	32,465,810	31,976,105	31,460,763	30,918,965	30,349,272									
Depreciation	25,418,333	25,418,333	25,456,083	25,456,083	25,456,083	25,456,083	25,456,083	25,456,083	25,456,083									
Pre-Tax Income (4-5-6)	13,180,389	15,058,994	16,950,752	18,932,994	20,928,713	22,939,880	24,958,037	26,984,771	29,017,332									
Federal and State Taxes (7*Tax Rate)	4,481,332	5,120,058	5,763,256	6,437,218	7,124,307	7,821,336	8,528,365	9,245,394	9,972,423									
Taxes Actually Paid	0	0	0	0	0	0	0	0	0									
Net Tax Income/Net Project Cash Flows:																		
1) After-Tax Income (7-8)	8,699,057	9,938,936	11,187,496	12,495,776	13,814,561	15,133,346	16,452,131	17,770,916	19,089,701									
2) After-Tax Cash Flow (4-5-9)	38,598,722	40,477,327	42,406,835	44,389,078	46,425,358	48,517,024	50,668,051	52,873,889	55,135,727									
3) Total Semi-Annual Principal Payment	7,618,542	8,028,969	8,462,918	8,911,064	9,374,117	9,862,823	10,367,964	10,890,362	11,440,880									
4) Net Project Cash Flows (11-12)	30,980,180	32,448,358	33,943,917	35,478,014	37,051,241	38,654,202	40,298,087	41,973,527	43,686,547									
5) Internal Rate of Return on Equity	30,980,180	32,448,358	33,943,917	35,478,014	37,051,241	38,654,202	40,298,087	41,973,527	43,686,547									
6) Equity Investment at 20% Equity/Debt Ratio																		

Equity Investment at 20% Equity/Debt Ratio

Average Ratios:

1) Pre-Tax Senior Debt Service Coverage Ratio	243.99%	248.95%	254.01%	259.17%	264.44%	269.81%	275.28%	280.87%	286.56%									
2) Pre-Tax Subordinated Debt Service Coverage Ratio	174.10%	177.59%	181.14%	184.79%	188.55%	192.39%	196.34%	200.37%	204.57%									
3) Minimum Semi-Annual Principal and Interest Prepayment Schedule:	41,842,302																	
Total Project Cost:																		
15 Year ACRS																		
% Allocation	80.00%	2,950,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000									
30 Year Straight Line		22,272,500	22,272,500	22,310,250	22,310,250	22,310,250	22,310,250	22,310,250	22,310,250									
% Allocation	20.00%	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833									
Non-Depreciable																		
% Allocation	0.00%																	
Total Original Project Cost Depreciation		25,418,333	25,418,333	25,456,083	25,456,083	25,456,083	25,456,083	25,456,083	25,456,083									



Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels

ENARIO: 4% Annual Growth In Revenues  
and Expenses

	(Revenue Growth Rate)		(Expense Growth Rate)		Semi-Annual Period		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%	
	Dec-08		Jun-09		Dec-09		Jun-10		Dec-10		Jun-11		Dec-11		Jun-12		Dec-12		1.9804%	
1) Semi-Annual Toll Revenues	153,259,615	156,294,754	159,390,000	162,546,544	165,765,600	169,048,408	172,396,224	175,810,342	179,292,073	182,838,804	186,447,636	190,111,670	193,832,904	197,604,338	201,429,972	205,303,806	209,230,840	213,205,074	217,230,808	221,312,042
2) Operating and Maintenance Expenses	64,035,047	65,303,191	66,596,449	67,915,319	69,260,307	70,631,931	72,030,719	73,457,209	74,911,948	76,398,687	77,910,726	79,448,315	81,011,604	82,599,853	84,213,222	85,851,931	87,515,340	89,204,799	90,919,568	92,659,987
3) Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
4) EBITD (1-2-3)	87,224,568	88,991,563	90,793,551	92,631,225	94,505,293	96,416,475	98,365,505	100,353,133	102,380,125	104,447,497	106,549,681	108,687,896	110,862,450	113,073,765	115,321,970	117,607,326	119,930,244	122,291,122	124,690,480	127,128,818
Present Value of Revenues Available for Debt Service @10																				
and Depreciation:																				
5) Total Semi-Annual Interest Payment	29,751,353	29,123,107	28,464,110	27,772,738	27,047,314	26,286,684	25,489,631	24,654,308	23,779,374	22,854,440	21,889,606	20,884,472	19,839,638	18,754,704	17,629,370	16,464,236	15,258,902	14,004,168	12,709,634	11,376,000
6) Depreciation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833
7) Pre-Tax Income (4-5-6)	54,327,382	56,722,623	59,183,608	61,712,655	64,312,145	66,983,958	69,730,040	72,552,992	75,454,917	78,433,467	81,489,274	84,623,846	87,837,820	91,132,005	94,507,326	97,964,692	101,504,936	105,129,058	108,838,168	112,623,486
8) Federal and State Taxes (7*Tax Rate)	18,471,310	19,285,692	20,122,427	20,982,303	21,866,129	22,774,546	23,708,214	24,668,017	25,654,672	26,677,819	27,737,166	28,832,221	29,962,696	31,128,200	32,329,434	33,566,108	34,838,932	36,147,606	37,492,930	38,874,704
9) Taxes Actually Paid	18,471,310	19,285,692	20,122,427	20,982,303	21,866,129	22,774,546	23,708,214	24,668,017	25,654,672	26,677,819	27,737,166	28,832,221	29,962,696	31,128,200	32,329,434	33,566,108	34,838,932	36,147,606	37,492,930	38,874,704
Net Tax Income/Net Project Cash Flows:																				
10) After-Tax Income (7-8)	35,856,072	37,436,931	39,061,181	40,730,352	42,446,016	44,209,412	46,021,826	47,884,975	49,800,245	51,769,657	53,786,108	55,849,625	57,960,129	60,117,825	62,322,892	64,576,584	66,878,912	69,229,880	71,630,388	74,081,424
11) After-Tax Cash Flow (4-5-9)	39,001,905	40,582,764	42,207,015	43,876,185	45,591,849	47,355,245	49,167,660	51,030,808	52,946,079	54,904,487	56,906,042	58,951,755	61,041,527	63,176,368	65,356,279	67,581,261	69,851,313	72,166,445	74,526,667	76,932,079
12) Total Semi-Annual Principal Payment	12,020,424	12,608,945	13,230,443	13,882,965	14,558,613	15,258,544	15,983,971	16,756,170	17,566,478	18,415,306	19,303,264	20,231,062	21,199,510	22,208,418	23,258,606	24,350,004	25,483,532	26,659,110	27,876,648	29,135,156
13) Net Project Cash Flows (11-12)	26,981,481	27,972,819	28,976,572	29,993,221	31,033,236	32,096,702	33,173,689	34,274,639	35,395,601	36,541,941	37,714,778	38,914,917	40,142,557	41,398,857	42,683,725	43,997,269	45,339,545	46,710,655	48,110,699	49,540,793
14) Internal Rate of Return on Equity	15.0128%																			

total Equity Investment at 20% Equity/Debt Ratio

verage Ratios:

15) Pre-Tax Senior Debt Service Coverage Ratio	292.37%	298.29%	304.33%	310.49%	316.77%	323.18%	329.71%	336.38%	343.17%
16) Pre-Tax Subordinated Debt Service Coverage Ratio	208.81%	213.24%	217.76%	222.37%	227.14%	232.08%	237.12%	242.34%	247.69%
Maximum Semi-Annual Principal and Interest	41,842,302								

Depreciation Schedule:

Total Project Cost:	36	37	38	39	40	41	42	43	44
15 Year ACRS									
% Allocation	80.00%								
30 Year Straight Line									
% Allocation	20.00%								
Non-Depreciable									
% Allocation	0.00%								

Total Original Project Cost Depreciation

	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833
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Massachusetts Turnpike Authority  
 Cashflow/Income Statement Model for Privately  
 Owned and Operated Toll Road and Tunnels

NARIO: 4% Annual Growth in Revenues  
 and Expenses

	(Revenue Growth Rate)		(Expense Growth Rate)		Semi-Annual Period		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%		1.9804%	
	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	Dec-21
Tax Income:																		
Semi-Annual Toll Revenues	182,842,756	186,463,756	190,156,466	193,922,306	197,762,725	201,679,198	205,673,234	209,746,366	213,900,163									
Operating and Maintenance Expenses	76,395,497	77,908,426	79,451,317	81,024,763	82,629,370	84,265,754	85,934,544	87,636,384	89,371,926									
Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000									
EBITD (1-2-3)	104,447,259	106,555,330	108,705,149	110,897,543	113,133,355	115,413,445	117,738,689	120,109,983	122,528,237									
Present Value of Revenues Available for Debt Service @10%																		
Depreciation:																		
Total Semi-Annual Interest Payment	22,862,850	21,903,260	20,898,480	19,846,881	18,746,181	17,594,586	16,389,638	15,129,358	13,811,096									
Depreciation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833									
Pre-Tax Income (4-5-6)	78,438,575	81,506,236	84,660,836	87,904,829	91,241,341	94,673,025	98,203,218	101,834,791	105,571,307									
Federal and State Taxes (7*Tax Rate)	26,669,118	27,712,120	28,784,684	29,887,642	31,022,058	32,188,829	33,389,094	34,623,829	35,894,244									
Taxes Actually Paid	26,669,118	27,712,120	28,784,684	29,887,642	31,022,058	32,188,829	33,389,094	34,623,829	35,894,244									
After-Tax Income (7-8)	51,769,460	53,794,118	55,878,152	58,017,187	60,219,285	62,484,197	64,814,124	67,210,962	69,677,063									
After-Tax Cash Flow (4-5-9)	54,915,293	56,839,949	59,021,985	61,163,020	63,365,118	65,630,030	67,959,957	70,356,795	72,822,896									
Total Semi-Annual Principal Payment	18,388,302	19,257,117	20,160,473	21,107,998	22,091,398	23,122,466	24,193,089	25,315,244	26,481,006									
Net Project Cash Flows (11-12)	36,526,991	37,682,832	38,861,512	40,055,024	41,273,722	42,507,564	43,766,868	45,041,551	46,341,890									
Internal Rate of Return on Equity	15.0128%																	

Total Equity Investment at 20% Equity/Debt Ratio

Coverage Ratios:

Pre-Tax Senior Debt Service Coverage Ratio	350.10%	357.17%	364.37%	371.72%	379.21%	386.86%	394.65%	402.60%	410.71%
Pre-Tax Subordinated Debt Service Coverage Ratio	253.21%	258.89%	264.75%	270.78%	277.03%	283.45%	290.12%	296.97%	304.10%
Minimum Semi-Annual Principal and Interest	41,842,302								
Depreciation Schedule:									
Total Project Cost:	45	46	47	48	49	50	51	52	53
15 Year ACRS									
% Allocation	80.00%								
30 Year Straight Line									
% Allocation	20.00%								
Non-Depreciable									
% Allocation	0.00%								
Total Original Project Cost Depreciation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833

Prepared by Goldman, Sachs Co.

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Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels

NARJO: 4% Annual Growth in Revenues  
and Expenses

	(Revenue Growth Rate)						(Expense Growth Rate)						TOTAL (Not Including Base Year)
	Semi-Annual Period						Semi-Annual Period						
Tax Income:	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%	1.9804%		
	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22		
Semi-Annual Toll Revenues	218,136,221	222,456,170	226,861,670	231,354,416	235,936,137	240,608,593	245,373,582	250,232,937	255,192,882	260,152,827	265,112,772	8,989,997,690	
Operating and Maintenance Expenses	91,141,839	92,946,803	94,787,513	96,664,675	98,579,013	100,531,262	102,522,174	104,552,513	106,622,852	108,733,191	110,883,530	3,756,207,558	
Property Taxes	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	122,000,000	
EBITD (1-2-3)	124,994,382	127,509,366	130,074,157	132,689,741	135,357,124	138,077,331	140,851,409	143,680,424	146,564,439	149,503,454	152,497,469	5,111,790,132	
Present Value of Revenues Available for Debt Service @10													
ie and Depreciation:													
Total Semi-Annual Interest Payment	12,432,671	10,991,218	9,483,759	7,907,769	6,260,024	4,537,740	2,773,646	1,420,648	1,730,781,322				
Depreciation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	0	943,750,000			
Pre-Tax Income (4-5-6)	109,415,878	113,372,315	117,444,565	121,636,138	125,951,268	130,393,757	134,931,930	142,259,776	2,437,258,810				
Federal and State Taxes (7*Tax Rate)	37,201,398	38,546,587	39,931,152	41,356,287	42,823,431	44,333,878	45,876,856	48,368,324	828,667,995				
Taxes Actually Paid	37,201,398	38,546,587	39,931,152	41,356,287	42,823,431	44,333,878	45,876,856	48,368,324	828,667,995				
Tax Income/Net Project Cash Flows:													
) After-Tax Income (7-8)	72,214,479	74,825,728	77,513,413	80,278,851	83,127,836	86,059,880	89,055,074	93,891,452	1,608,590,815				
) After-Tax Cash Flow (4-5-9)	75,360,313	77,871,561	80,659,246	83,425,685	86,273,669	89,205,713	92,200,907	93,891,452	2,552,340,815				
) Total Semi-Annual Principal Payment	27,702,556	28,982,184	30,312,293	31,705,408	33,154,179	34,041,387	27,059,957	28,412,955	755,000,000				
) Net Project Cash Flows (11-12)	47,657,756	48,989,377	50,346,953	51,720,277	53,119,491	55,164,326	65,140,950	65,478,498	1,797,340,815				
Internal Rate of Return on Equity	47,657,756	48,989,377	50,346,953	51,720,277	53,119,491	55,164,326	65,140,950	65,478,498	1,797,340,815				
				</									

Tax Income/Net Project Cash Flows:

After-Tax Income (7-8)	72,214,479	74,825,728	77,513,413	80,279,851	83,127,836	86,059,880	89,055,074	93,891,452	1,608,590,815
After-Tax Cash Flow (4-5-9)	75,360,313	77,871,561	80,659,246	83,425,685	86,273,669	89,205,713	92,200,907	93,891,452	2,552,340,815
Total Semi-Annual Principal Payment	27,702,556	28,982,184	30,312,293	31,705,408	33,154,179	34,041,387	27,059,957	28,412,955	755,000,000
Net Project Cash Flows (11-12)	47,657,756	48,889,377	50,346,953	51,720,277	53,119,491	55,164,326	65,140,950	65,478,498	1,797,340,815
Internal Rate of Return on Equity	15.0128%								

Equity Investment at 20% Equity/Debt Ratio

Pre-Tax Senior Debt Service Coverage Ratio	418.97%	427.40%	436.00%	444.77%	453.71%	462.82%	472.12%	481.61%	
Pre-Tax Subordinated Debt Service Coverage Ratio	311.43%	318.99%	326.85%	334.96%	343.42%	357.91%	472.12%	481.61%	
Minimum Semi-Annual Principal and Interest	41,842,302								

Depreciation Schedule:

Total Project Cost:	54	55	56	57	58	59	60	61	
15 Year ACRS									1
% Allocation									755,000,000
30 Year Straight Line									
% Allocation									0
Non-Depreciable									
% Allocation									
Total Original Project Cost Depreciation	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	3,145,833	0	943,750,000

Massachusetts Turnpike Authority  
 Cashflow/Income Statement Model for Privately  
 Owned and Operated Toll Road and Tunnels

BT SERVICE SCHEDULES

Major Debt (60% of Source) @: 10.0000%

	1	2	3	4	5	6	7
	Jun-81	Jun-82	Dec-82	Jun-83	Dec-83	Jun-84	Dec-84
Principal Outstanding	566,250,000	563,131,740	561,454,725	559,693,858	557,844,949	555,903,594	553,865,171
Interest Due	28,312,500	28,156,587	28,072,736	27,984,693	27,892,247	27,795,180	27,693,259
Principal Due	1,521,102	1,597,158	1,760,866	1,848,909	1,941,355	2,038,423	2,140,344
Total Debt Service	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602

Coordinated Debt (20% of Source) @: 11.5000%

	1	2	3	4	5	6	7
	Jun-81	Jun-82	Dec-82	Jun-83	Dec-83	Jun-84	Dec-84
Principal Outstanding	188,750,000	188,750,000	188,750,000	188,750,000	188,750,000	188,750,000	188,750,000
Interest Due	10,853,125	10,853,125	10,853,125	10,853,125	10,853,125	10,853,125	10,853,125
Principal Due	0	0	0	0	0	0	60,000
Total Debt Service	10,853,125	10,853,125	10,853,125	10,853,125	10,853,125	10,853,125	10,913,125

Average Requirement for Principal Payment 120.00%

	1	2	3	4	5	6	7
	Jun-81	Jun-82	Dec-82	Jun-83	Dec-83	Jun-84	Dec-84
Principal Outstanding	755,000,000	751,881,740	750,204,725	748,443,858	746,594,949	744,653,594	742,615,171
Interest Due	39,165,625	39,009,712	38,925,861	38,837,818	38,745,372	38,648,305	38,546,384
Principal Due	1,521,102	1,597,158	1,760,866	1,848,909	1,941,355	2,038,423	2,140,344
Total Debt Service	40,686,727	40,686,727	40,686,727	40,686,727	40,686,727	40,686,727	40,746,727

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BT SERVICE SCHEDULES		8	9	10	11	12	13	14	15	16
		Jun-95	Dec-95	Jun-96	Dec-96	Jun-97	Dec-97	Jun-98	Dec-98	Jun-99
Principal Debt (60% of Sources)	@: 10.0000%									
Principal Outstanding		551,724,827	549,477,466	547,117,737	544,640,022	542,038,420	539,306,739	536,438,474	533,426,795	530,264,532
Interest Due		27,586,241	27,473,873	27,355,887	27,232,001	27,101,921	26,965,337	26,821,924	26,671,340	26,513,227
Principal Due		2,247,361	2,359,729	2,477,716	2,601,601	2,731,681	2,868,265	3,011,679	3,162,263	3,320,376
Total Debt Service		29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602
Subordinated Debt (20% of Sources)	@: 11.5000%									
Principal Outstanding		188,690,000	188,540,000	188,300,000	187,960,000	187,530,000	187,000,000	186,370,000	185,630,000	184,780,000
Interest Due		10,849,675	10,841,050	10,827,250	10,807,700	10,782,975	10,752,500	10,716,275	10,673,725	10,624,850
Principal Due		150,000	240,000	340,000	430,000	530,000	630,000	740,000	850,000	960,000
Total Debt Service		10,999,675	11,081,050	11,167,250	11,237,700	11,312,975	11,382,500	11,456,275	11,523,725	11,584,850
Average Requirement for Principal Payment	120.00%									
Total Debt										
Principal Outstanding		740,414,827	738,017,466	735,417,737	732,600,022	729,568,420	726,306,739	722,808,474	719,056,795	715,044,532
Interest Due		38,435,916	38,314,923	38,183,137	38,039,701	37,884,896	37,717,837	37,538,199	37,345,065	37,138,077
Principal Due		2,397,361	2,599,729	2,817,716	3,031,601	3,261,681	3,498,265	3,751,679	4,012,263	4,280,376
Total Debt Service		40,833,277	40,914,652	41,000,852	41,071,302	41,146,577	41,216,102	41,289,877	41,357,327	41,418,452



**Massachusetts Turnpike Authority  
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**NET SERVICE SCHEDULES**

For Debt (60% of Sources) @: 10.0000%

	17	18	19	20	21	22	23	24	25
	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Dec-03
Principal Outstanding	526,944,156	523,457,762	519,797,048	515,953,298	511,917,360	507,679,626	503,230,004	498,557,902	493,652,195
Interest Due	26,347,208	26,172,888	25,989,852	25,797,665	25,595,868	25,383,981	25,161,500	24,927,895	24,682,610
Principal Due	3,486,395	3,660,714	3,843,750	4,035,938	4,237,734	4,449,621	4,672,102	4,905,707	5,150,993
Total Debt Service	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602

ordinated Debt (20% of Sources) @: 11.5000%

	17	18	19	20	21	22	23	24	25
	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Dec-03
Principal Outstanding	183,820,000	182,750,000	181,570,000	180,270,000	178,850,000	177,300,000	175,630,000	173,830,000	171,890,000
Interest Due	10,569,650	10,508,125	10,440,275	10,365,525	10,283,875	10,194,750	10,098,725	9,995,225	9,883,675
Principal Due	1,070,000	1,180,000	1,300,000	1,420,000	1,550,000	1,670,000	1,800,000	1,940,000	2,070,000
Total Debt Service	11,639,650	11,688,125	11,740,275	11,785,525	11,833,875	11,884,750	11,898,725	11,935,225	11,953,675

Average Requirement for Principal Payment 120.00%

**Debt**

	17	18	19	20	21	22	23	24	25
	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Dec-03
Principal Outstanding	710,764,156	706,207,762	701,367,048	696,223,298	690,767,360	684,979,626	678,960,004	672,387,902	665,542,195
Interest Due	36,916,858	36,681,013	36,430,127	36,163,190	35,879,743	35,578,731	35,260,225	34,923,120	34,566,285
Principal Due	4,556,395	4,840,714	5,143,750	5,455,938	5,787,734	6,119,621	6,472,102	6,845,707	7,220,993
Total Debt Service	41,473,252	41,521,727	41,573,877	41,619,127	41,667,477	41,698,352	41,732,327	41,768,827	41,787,277



## IT SERVICE SCHEDULES

## 11 Debt

**Massachusetts Turnpike Authority  
Cashflow/Income Statement Model for Privately  
Owned and Operated Toll Road and Tunnels**

BT SERVICE SCHEDULES			35	36	37	38	39	40	41	42	43
		@: 10.0000%	Dec-08	Jun-08	Dec-08	Jun-10	Dec-10	Jun-11	Dec-11	Jun-12	Dec-12
Principal Debt (80% of Sources)											
Principal Outstanding			428,863,563	420,473,139	411,663,193	402,412,750	392,699,785	382,501,172	371,792,629	360,548,658	348,742,488
Interest Due			21,443,178	21,023,657	20,583,160	20,120,638	19,634,989	19,125,059	18,589,631	18,027,433	17,437,124
Principal Due			8,390,424	8,809,945	9,250,443	9,712,965	10,198,613	10,708,544	11,243,971	11,806,170	12,398,478
Total Debt Service			29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602
Coordinated Debt (20% of Sources) @: 11.5000%											
Principal Outstanding			144,490,000	140,860,000	137,060,000	133,080,000	128,910,000	124,550,000	120,000,000	115,250,000	110,300,000
Interest Due			8,308,175	8,099,450	7,880,950	7,652,100	7,412,325	7,161,625	6,900,000	6,626,875	6,342,250
Principal Due		0	3,630,000	3,800,000	3,980,000	4,170,000	4,360,000	4,550,000	4,750,000	4,950,000	5,160,000
Total Debt Service			11,938,175	11,899,450	11,860,950	11,822,100	11,772,325	11,711,625	11,650,000	11,576,875	11,502,250
verage Requirement for Principal Payment		120.00%									
Total Debt											
Principal Outstanding			573,353,563	561,333,139	548,723,193	535,482,750	521,609,785	507,051,172	491,782,629	475,798,658	459,042,488
Interest Due			28,751,353	28,123,107	28,484,110	27,772,738	27,047,314	26,286,684	25,489,631	24,654,308	23,779,374
Principal Due			12,020,424	12,609,945	13,230,443	13,882,965	14,558,613	15,258,544	15,993,971	16,756,170	17,556,478
Total Debt Service			41,771,777	41,733,052	41,694,552	41,655,702	41,605,927	41,545,227	41,483,602	41,410,477	41,335,852

**Massachusetts Turnpike Authority  
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BT SERVICE SCHEDULES		44	45	46	47	48	49	50	51	52
		Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17
Principal Debt (60% of Sources)	@: 10.0000%									
Principal Outstanding		336,346,010	323,329,708	309,662,591	295,312,118	280,244,122	264,422,725	247,810,259	230,367,170	212,851,926
Interest Due		16,817,300	16,168,485	15,483,130	14,765,608	14,012,206	13,221,136	12,390,513	11,516,358	10,602,596
Principal Due		13,016,302	13,667,117	14,350,473	15,067,998	15,821,398	16,612,466	17,443,089	18,315,244	19,231,006
Total Debt Service		29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602
Subordinated Debt (20% of Sources) @: 11.5000%										
Principal Outstanding		105,140,000	98,770,000	94,180,000	88,370,000	82,330,000	76,060,000	69,550,000	62,800,000	55,800,000
Interest Due		6,045,550	5,736,775	5,415,350	5,081,275	4,733,975	4,373,450	3,999,125	3,611,000	3,208,500
Principal Due	0	5,370,000	5,590,000	5,810,000	6,040,000	6,270,000	6,510,000	6,750,000	7,000,000	7,250,000
Total Debt Service		11,415,550	11,326,775	11,225,350	11,121,275	11,003,975	10,883,450	10,749,125	10,611,000	10,458,500
Average Requirement for Principal Payment 120.00%										
Total Debt										
Principal Outstanding		441,486,010	423,098,708	403,842,591	383,682,118	362,574,122	340,482,725	317,360,259	293,167,170	267,851,926
Interest Due		22,862,850	21,903,260	20,898,480	19,846,881	18,746,181	17,594,586	16,389,638	15,129,358	13,811,096
Principal Due		18,386,302	19,257,117	20,160,473	21,107,998	22,091,398	23,122,468	24,193,089	25,315,244	26,481,006
Total Debt Service		41,249,152	41,160,377	41,058,952	40,954,877	40,837,577	40,717,052	40,582,727	40,444,602	40,292,102

**Massachusetts Turnpike Authority  
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DEBT SERVICE SCHEDULES			53	54	55	56	57	58	59	60	
		@:	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	TOTAL
Senior Debt (80% of Source)		10.0000%									
Principal Outstanding			192,820,920	172,628,363	151,428,179	129,163,886	105,788,478	81,244,299	55,472,912	28,412,955	
Interest Due			9,641,048	8,631,418	7,571,309	6,458,194	5,289,424	4,062,215	2,773,646	1,420,648	1,253,599,747
Principal Due			20,182,556	21,202,184	22,262,293	23,375,408	24,544,179	25,771,387	27,059,957	28,412,955	566,250,000
Total Debt Service			29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	29,833,602	1,819,849,747
Subordinated Debt (20% of Source)		11.5000%									
Principal Outstanding			48,550,000	41,040,000	33,260,000	25,210,000	16,880,000	8,270,000	0	0	
Interest Due			2,791,625	2,359,800	1,912,450	1,449,575	970,600	475,525	0	0	477,181,575
Principal Due			7,510,000	7,780,000	8,050,000	8,330,000	8,610,000	8,270,000	0	0	188,750,000
Total Debt Service			10,301,625	10,139,800	9,962,450	9,779,575	9,580,600	8,745,525	0	0	665,931,575
Coverage Requirement for Principal Payment		120.00%									
Total Debt											
Principal Outstanding			241,370,920	213,668,363	184,686,179	154,373,886	122,668,478	89,514,299	55,472,912	28,412,955	
Interest Due			12,432,671	10,991,218	9,483,759	7,907,769	6,260,024	4,537,740	2,773,646	1,420,648	1,730,781,322
Principal Due			27,702,556	28,982,184	30,312,293	31,705,408	33,154,179	34,041,387	27,059,957	28,412,955	755,000,000
Total Debt Service			40,135,227	39,973,402	39,796,052	39,613,177	39,414,202	38,579,127	29,833,602	29,833,602	2,485,781,322